



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/788,972	02/27/2004	Uwe Schlagenhauf	696.027	6823
23598	7590	06/27/2006	EXAMINER	
BOYLE FREDRICKSON NEWHOLM STEIN & GRATZ, S.C.			ADDISU, SARA	
250 E. WISCONSIN AVENUE			ART UNIT	
SUITE 1030			PAPER NUMBER	
MILWAUKEE, WI 53202			3722	

DATE MAILED: 06/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/788,972	SCHLAGENHAUF ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Sara Addisu	3722	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 27 February 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>6/7/04</u> .  | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Claim Objections***

1. Claims 13 and 15 are objected to because of the following informalities:

- Claim 13, line 3 recites “such as are known for example”. And claim 15, line 3 recites “such as for example”.

Appropriate correction is required.

### ***Specification***

2. The disclosure is objected to because of the following informalities:

- Page 9, line 1 recites “blade bearer 20”. It should be “cutting chamber 20”.
- Page 10, paragraph 3, line 7 recites “narrow point 48”. It should be “narrow point 50”.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1, 7, 19 and 20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and

Art Unit: 3722

distinctly claim the subject matter which applicant regards as the invention.

- Claim 1, line 9 recites “..that stands in a chain of pressure force with the adjustment element”. Further review of the Specification does not clarify the claimed subject matter. For the purpose of this office action, Examiner interprets it as “the screw applies a restoring force to the adjusting element”.
- Claim 7, line 2 recites “..the cutting insert is formed by an indexable insert”. From the way it is written, it is not clear what the claimed subject matter is. For the purpose of this office action, Examiner interprets it as “..the cutting insert is indexable”.
- Claim 19, line 3, recites “..(Ti<sub>x</sub>Al<sub>y</sub>Y<sub>z</sub>)N with x=.38...”. Claim 19 depends from claim 17 where only TiN or (TiAl)N are claimed. The claimed subject matter (chemical composition) is not claimed properly. For the purpose of this office action, Examiner interprets it as “..TiN material”.
- Claim 20, line 2 recites “..the cutting insert is formed by an DIN/ISO indexable insert”. From the way it is written, it is not clear what the claimed

subject matter is. For the purpose of this office action, Examiner interprets it as “..the cutting insert is indexable”.

4. A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance:
  - Claim 12 recites the broad recitation “formed by a hard material”, and the claim also recites “preferably a sintered material such as for example a

hard metal or cermet material ” which is the narrower statement of the range/limitation.

- Claim 14 recites the broad recitation “M.08-M16”, and the claim also recites “preferably M1.2-M16” which is the narrower statement of the range/limitation.
- Claim 17 recites the broad recitation “hard material layer is made of diamond”, and the claim also recites “preferably nanocrystalline diamond of TiN or of (Ti,Al)N...” which is the narrower statement of the range/limitation.
- Claim 17 recites the broad recitation “Cr portion is 30-65%”, and the claim also recites “preferably 30-60% and preferably 40-60%” which is the narrower statement of the range/limitation.
- Claim 17 recites the broad recitation “Al portion is 15-35%”, and the claim also recites “preferably 17-25%” which is the narrower statement of the range/limitation.
- Claim 17 recites the broad recitation “Ti portion is 16-40%”, and the claim also recites “preferably 16-35% and particularly preferably 24-35% ” which is the narrower statement of the range/limitation.
- Claim 19 recites the broad recitation “CrN”, and the claim also recites “preferably CrN layer” which is the narrower statement of the range/limitation.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1, 5, 6, 8-10, as best understood, are rejected under 35

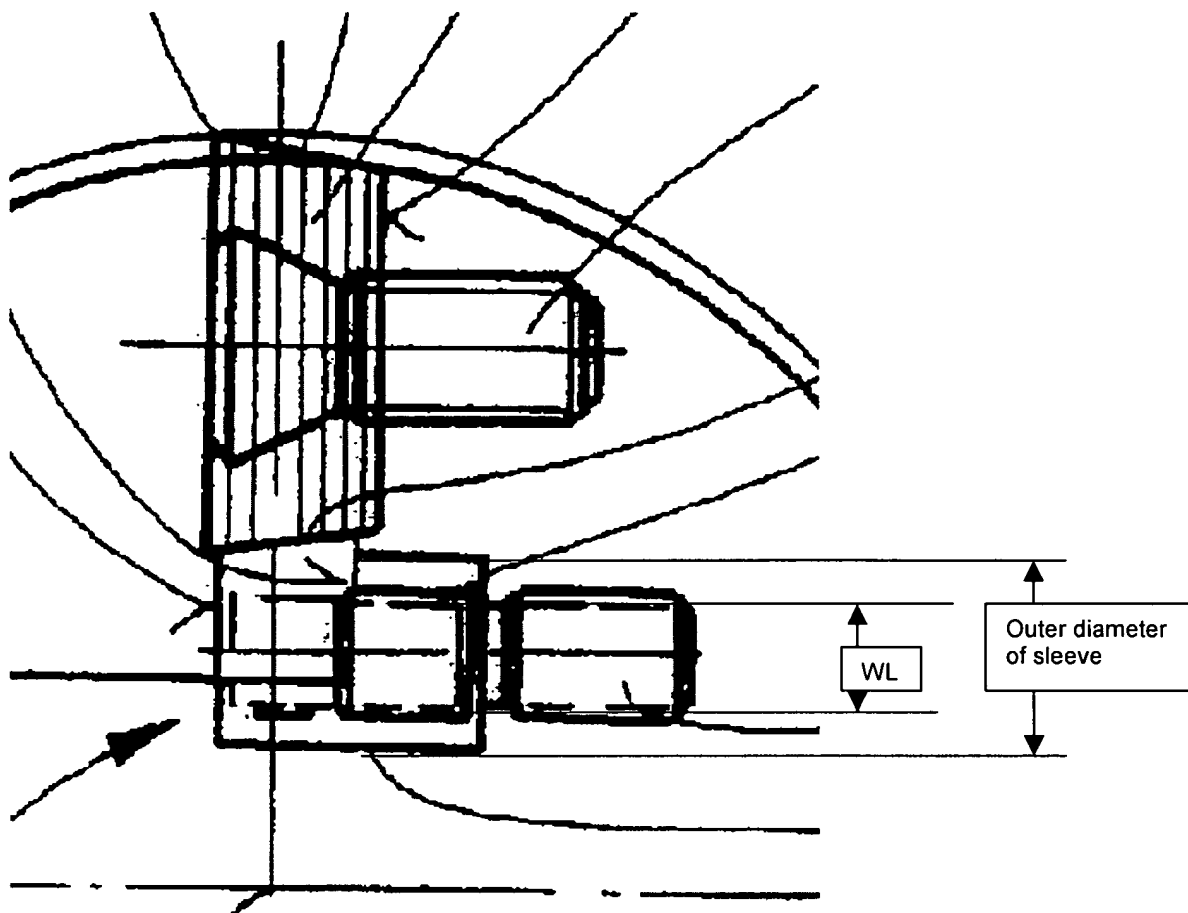
U.S.C. 102(b) as being anticipated by Kress (USP 6,692,198).

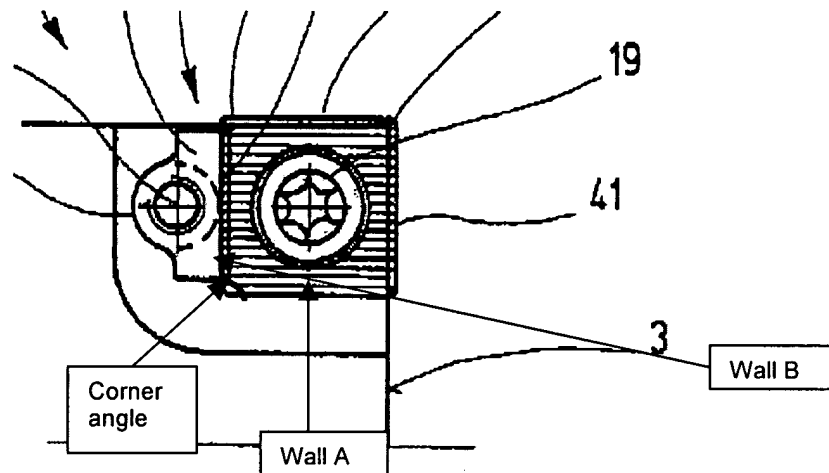
KRESS teaches a rotationally driven cutting tool for machining of workpieces, having a cutting insert (11) fastened detachably in the tools pocket and clamped flatly against a base surface of the pocket, a fine adjustment device having an adjustment element (27) that is supported on the lateral wall face (23) of the insert (11) and is displaceable relative to the insert via an adjusting screw arrangement ('198, figures 1, 2, 5a-5e and Col. 2, lines 28-37). KRESS also teaches the adjusting screw arrangement comprises a threaded sleeve (29) that is held with play in a smooth through opening having a narrow point (with width WL: see below) and comprises a screw part (31) standing in functional engagement therewith such that the clamping screw (31) applies a restoring force to the adjusting element ('198, figure 1 and col. 8, lines 13-15). KRESS

Art Unit: 3722

teaches in figure 1, the adjusting screw (31) being placed into the through opening of the tool from the side facing the base surface. KRESS also teaches the set screw (31) is accessible from the right (i.e. can be actuated from the other side opposite the base, through the narrow point ('198, col. 2, lines 44-47). Regarding claim 5, the adjusting element (27) is seated flatly (via surface 29) on the lateral wall (23) of the cutting insert (11). Regarding claim 8, KRESS teaches the pocket having two supporting walls (A & B: where B is formed by 27) that accepts the cutting insert which together enclose an angle that corresponds to a corner angle of the cutting insert. Regarding claims 9 and 10, KRESS teaches the cylindrical through opening in the tool holder extends along an axis that is placed at an angle (90 degrees) to the base surface of the pocket of the tool holder.

Art Unit: 3722





### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 2-4, 7, 11 and 20, as best understood, is rejected under 35 U.S.C. 103(a) as being unpatentable over Kress (USP 6,692,198), in view of Chang (USP 6,155,753).

KRESS teaches a rotationally driven cutting tool having a cutting insert (11) fastened detachably in the tools pocket and clamped flatly against a base surface of the pocket, a fine adjustment device comprising a threaded sleeve (29) and a screw part (31), as set forth in the above rejection. Regarding claims 7 and 20, it is old and well known to utilize an indexable insert in KRESS's invention, to increase the number of cutting edges to cut cost.

However, KRESS fails to teach the screw part of the adjusting screw arrangement is formed by a screw bolt whose threaded segment goes over via a step into a preferably wedge-shaped beveled head or into a beveled cylindrical pin segment that forms the adjusting element.

CHANG teaches in a fine adjustment mechanism for a cutting tool having an insert (34) removably attached to the toolholder, an adjustment device comprising a screw part (33 and gasket 36 as a unit) whose threaded segment goes over via a step into a head portion having an inclined face (i.e. wedge-shaped beveled head or into a beveled cylindrical pin segment) (361) ('753, figure 1 and Col. 4, lines 34-59). CHANG also teaches that the inclined face (361) of the head portion has an inclination angle that is the same as the clearance angle ( $\alpha$ ) of the insert (34) such that upon elevating screw (33), the insert is moved laterally ('753, figure 5 & col. 4, lines 41-43 and 52-59).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to replace the expansive adjustment means of KRESS's invention with a screw head having a beveled/wedged portion, as taught by CHANG for

Art Unit: 3722

the purpose of making the adjustment means compact with less parts. It is still desirable to have the differential screw of Kress in the modification, to allow access from both ends.

7. Claims 12, 13, 15-19 and 21, as best understood, is rejected under 35 U.S.C. 103(a) as being unpatentable over Kress (USP 6,692,198), in view of Schulz et al. (USP 5,549,975).

KRESS teaches a rotationally driven cutting tool, as set forth in the above rejection.

However, KRESS fails to teach the material composition of the tool.

Regarding claims 12, 13, 15-17 and 21, SCHULZ ET AL. teaches the body of a cutting tool being made of cermented carbide as well as providing it with coating at least in the working area with hard material such as TiN and TiAlN ('975, col. 1, lines 5-8, Col. 2, lines 66-67). Regarding claim 18, SCHULZ ET AL. teaches coating of TiC, TiN or TiCN or of a mixture of these materials ('975, col. 1, lines 29-30). Furthermore, regarding claims 17 and 19, it would have been obvious to select the percentage of layer depending on the wear resistant strength desired, because it has been held that discovering the optimum value of a result effective variable involves only routine skill in the art. Applicant should further note that Specification gives no criticality to the claimed limitation (see Page 12, , paragraph 2).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to make the tool body of KRESS's invention from hard material with coating, as taught by SCHULZ ET AL. for the purpose of improving wear resistance ('975, col. 1, lines 58-61).

8. Claim 14, as best understood, is rejected under 35 U.S.C. 103(a) as being unpatentable over Kress (USP 6,692,198).

KRESS discloses the claimed invention (i.e., threaded sleeve, to be engaged by the threading of the screw 31), except for the winding of the threaded sleeve having a size in the range of M.08-M16 or M1.2-M16). It would have been obvious to one having ordinary skill in the art at the time the invention was made to choose different screws having different ranges of thread winding depending on the machining operation taking place (e.g. depending on the quality of finished surface of the workpiece desired) such that one can determine how far and how controlled the insert needs to extend/be adjusted, because it has been held that where the general conditions are disclosed in the prior art, discovering the optimum or working range involves only routine skill in the art.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sara Addisu at (571) 272-6082. The examiner can normally be reached on 8:30 am - 5 PM.

Art Unit: 3722

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Monica Carter can be reached on (571) 272-4475. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sara Addisu  
(571) 272-6082

SA  
6/23/06

*Monica S. Carter*  
**MONICA CARTER**  
SUPERVISORY PATENT EXAMINER